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ABSTRACT

This article focuses on the cognitive development of community college students. According to the article, a student can develop higher levels of cognitive reasoning through curricular activities that include problem solving, analytic thinking, and synthesizing exercises. In problem solving, students first identify and define a problem, then select information from a variety of sources to support their theory for solving the problem. Analytic thinking exercises help the student learn to separate fact from opinion, and consider ideas like propaganda and censorship. Synthesizing the subject matter involves combining the accurate or useful information and omitting unnecessary parts. Once this is done, students can practice communicating critically by writing an opinion paper or making a persuasive presentation to the class. The author includes a section on incorporating the following philosophies into the curriculum: experimentalism, idealism, behaviorism, and existentialism. The article concludes with samples of classroom activities using alternative modes of thought such as inferences and cause-and-effect reasoning to enhance critical thinking skills. (AF)

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Marlow Ediger

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# THE STUDENT AND THE COMMUNITY COLLEGE CURRICULUM

An educated student needs to achieve higher levels of cognition in knowledge and skills goals. Why? As a student progresses through the different levels of academic achievement, levels of thought and thinking become increasingly complex. More is expected of the student as he/she reaches the community college level, as compared to earlier objectives stressed in teaching and learning situations. With mastering complex levels of thinking, the student becomes more flexible and capable in decision making within the community college and work place arenas.

There are numerous kinds of thinking that students need to become proficient in. These kinds of thinking will always be refined and ongoing. Thus, increasing levels of higher performance will be involved and in the offing for complex thinking in the cognitive domain.
Which objectives then should be stressed in different academic disciplines and in vocational education?

## Problem Solving in the Curriculum

A useful as well as a complex level of thinking is stressed in problem solving. Problems abound, major and minor. Each needs to be identified and stated clearly. With clarity of statement, it is easier to determine its meaning as compared to a problem that has a hazy definition. Once, the problem is clearly selected in context, the student may select information in order to offer solutions. The information may come from a variety or reference sources. These come from reading, discussing, resource personnel, technological procedures, as well as from personal reflection. The information obtained must match with and provide information for the identified problem. What does not assist in problem solution needs to be discarded. In some problems, much time can be spent in gathering data, while for others there is little time to arrive at necessary solutions.

Problems may also be thought of as questions which require deliberation and thoroughness to obtain information. The resulting information to solve a problem/question emphasizes an hypothesis. The hypothesis is a tentative answer, not an absolute.Thus, additional data sources are necessary to evaluate the thoroughness/accuracy of the hypothesis. If the hypothesis holds up under scrutiny, the hypothesis for now is accepted. Otherwise, it means going back to the drawing board to secure other information for problem solving (Ediger, 1995, Chapter Five).

The community college instructor may develop a syllabus covering problems/questions inherent in textbook content as well as in other related reference sources. Each day then, students may use the study guide problems/questions to reflect upon and attain possible answers.

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Content acquired here might then be used to assist the student to fully participate in the next class session. The student should have ample background information here to actively participate in the classroom setting in discussions involving higher levels of cognition.

## Analytic Thinking in the Curriculum

Analytic thinking stresses separation of facts from opinions, fantasy from reality, and accurate from inaccurate knowledge. To analyze is to separate into component parts. The useful from the non useful needs to be separated in order to reorganize information. To say, as never before, individuals are bombarded with messages of different kinds. The message appears in print, on internet, world wide web, on TV, in slogans, and in oral communication. The information age is with us. With many ideas being presented to individuals in society, students need to be able to analyze the following, among other ideas:

1. band wagon approaches.
2. propaganda techniques.
3. indoctrination.
4. repetition of statements to regulate ideas being presented.
5. agendas that people have in presenting a certain point of view in the name of being objective. Thus, a writer may write that research shows heterogeneous grouping alone should be used in the public schools; homogeneous grouping is undemocratic.
6. censorship of ideas.
7. recognition of a few people in a discussion and not others. The appearance and final written report of the deliberation is still given that democratic procedures were being followed.
8. secret meetings among selected individuals being held without inviting the total committee to attend the meeting.
9. detection of motives in points of view being presented in a newspaper essay.
10. analyzing purpose involved in writing a letter to the editor (Ediger, 1997, 41-45).

The community college student then needs to be able to analyze what has been read and be an intelligent consumer of print discourse. Gullibility might then be avoided.

## Synthesizing Subject Matter

After content has been analyzed, a synthesis needs to be forthcoming. Synthesizing involves combining information after the unwanted parts have been omitted. Separating accurate from inaccurate content eliminates inaccurate ideas. The accurate ideas then need to be

joined together to become useful in the life of the student. Synthesizing involves combining, joining together, concluding, summarizing, and developing holism. Synthesizing then occurs after analysis has occurred.

In oral and written communication, there are many examples of synthesis that community college students need to become proficient in. In writing a response to an essay test item, the student holistically composes an answer that eliminates the irrelevant from the relevant. Certain information is then written by the student that provides an answer to the essay test item. When writing an outline, there is necessary sequential content recorded as compared to the omitted non sequential unnecessary subject matter. In writing letters, there are selected ideas that one wishes to communicate and not others. What is chosen, after analysis, is then synthesized. The following represent further examples of synthesizing ideas that community college students need to become proficient in:

1. brain storming.
2. story writing.
3. narrative content discourse.
4. expository compositions.
5. creative presentation of content.
6. elaboration and addition to a certain topic.
7. solutions to a dilemma.
8. writing an opinion based on logical thought.
9. persuasive written work to convince, such as in the political arena.
10. presentation of an opposing point of view.

Each of the above named kinds o writing stresses synthesizing after analyization has taken place. Thus, in brain storming, for example in item #1 above, the ideas presented have eliminated/minimized others after which the final ideas is presented in the brain storm oral/written work (Ediger, 1995, 1-11).

Identifying and Using a Philosophical Strand of Thought

Here, community college students need to have knowledge of and engage in consistent thought using each separate major philosophy. These philosophies may be taken in any order. Experimentalism emphasizes a project method of thinking. The project identified by the student with instructor guidance emphasizes a purpose. The purpose stresses an interest that a student has contextually with what is being discussed in a classroom setting. The setting may be external to the classroom discussion, but related to the course being covered. A student with instructor guidance then may wish to develop a term paper on a selected topic. After the purpose has been determined, planning needs

to occur in order to achieve the purpose. The purpose as well as the plans need clarity to pursue work on the project. Sequential steps in the planning will be forthcoming.The plans then need to be carried out to fruition. Perseverance and accuracy are important concepts to embrace when carrying out the plans. Processes are salient when doing and engaging in carrying out the plans to to a satisfactory completion. Standards need to be developed to evaluate the project. These criteria may be developed by the student and instructor cooperatively. Democracy as a way of life is important here.

A second philosophy to emphasize with consistent thought is idealism. Idealists believe that subject matter is more important to stress as compared to a doing approach in achieving, growing, and accomplishing. Products of knowledge rather than processes in doing are salient in the thinking of idealists. Idealism tends to stress abstract learning as a major objective of instruction. The emphasis is upon subject matter learning. Idealism stresses ideas to be acquired. Vital facts, concepts, and generalizations need acquisition by learners from ongoing lectures and discussions. Questions and comments by students are vital to indicate interest and motivation. The instructor, however, is a more dominant person here as compared to experimentalism as a philosophy of instruction. The instructor is highly academic in presenting information to students. The subject matter presented tends not to be a part of solving problems, but must be presented as important to learn for its own sake. It is up to the student to glean salient ideas from subject matter presented by the instructor. The instructor must take the abilities of students into consideration so that the pace and sequence of content presented is acquired optimally by students. Development of the mind and mental achievement is of most importance to an idealist. With optimal mental development, the chances are better that the involved person can deal with scenes and situations in life more fully and thoroughly. Mind is real and needs development. Essay tests would do the best job of ascertaining what students have learned when stressing idealism as a philosophy of teaching. Logical, coherent thinking is very important to ascertain viable facts, concepts, and generalizations achieved by learners.

A third philosophy emphasizes behaviorism with its precisely stated objectives of instruction. Each objective needs to be stated in measurable terms so that a student either has/has not been successful in goal attainment. The precise ends are written prior to instruction. Student may even have a copy of the objectives so they can study and gauge their progress to achieve each objective with certainty. The instructor needs to teach in a manner so that students may attain these ends. Testing is done so that students may indicate if they have/have not been successful in achieving the objectives. Tests need to be valid so they measure precisely what has been learned in ongoing class

sessions. Each class session stresses students achieving the behaviorally stated, specific objectives. A lack of validity in testing is in evidence if the class sessions do not relate directly to the precise objectives stated in measurable terms. As a result of testing, the unachieved objectives may provide objectives for instruction. Tests need to measure consistently so that reliability is in evidence, such as test/retest, alternative forms, and/or internal consistency, is in evidence.

Behaviorism works well with exact subject matter such as mathematics and science.

A fourth philosophy of instruction to stress is existentialism. Existentialists believe that a very open ended curriculum needs to be in the offing, quite opposite of behaviors discussed above. They advocate that a person first exists and then he/she must find their essences or goals in life. These goals are not given to any individual but must be sought. Life consists of making choices and decisions in an open situation. Since choices and decisions are not given to anyone, choosing and decision-making opportunities need to be given to students. The curriculum needs to stress the subjective since choosing and deciding rarely emphasize objectivity in their outcomes. Generally, there are many possibilities in making good choices. There may also be several possibilities for choosing when a situation is anything but positive. Choosing the best from all negative possibilities may then be in evidence (Ediger, 1997, 179-182).

The area of choosing and decision making in an open ended environment may make for anxiety and dread. These dreadful choices and decisions need to be made regardless. Literature and history courses work well here in that alternatives were faced by individuals and yet something had to be done in context. Alienation might have occurred due to what was decided upon. Hopefully, the best choices and decisions will have been made, but there is no crystal ball to notice consequences. Students then need to look at history and literature in terms of alternatives faced by individuals in a contextual situation. Students need to study the consequences of what happened as a result. It is good, too, for students to discuss which complex problems they have faced and what the alternatives were. Values clarification strategies work well here. The writer used the following strategy in one class session whereby student responded to the following (See Simon, Howe, and Kirschenbaum, 1978):

1. What was the most difficult situation you faced in life?
2. If you had one day left to live, what would you do?
3. What would you like to have people say about you after your death?

Students responded in writing and <u>voluntarily</u> shared in class their

responses if they wished to do so. It was surprising how many students did share their responses and how deeply listeners felt with sympathy and understanding toward responders. As examples, in response to number one above, two separate students responded with the following:

1. a young twenty-seven year old had gone through a bad divorce; his parents had just celebrated their thirtieth wedding anniversary. The parents had felt a person should marry only once, unless a natural death do part. The young man truly felt the anxiety of such a situation. Students in class were indeed careful listeners and very sympathetic.

2. A second student stated that she had never gotten along with her mother. She was approximately twenty-five years of age and almost cried as she responded. Her father had always been very good to her. When she went home between long intervals of time, the mother would literally criticize, like had always been done, everything she did. The father tried desperately to soothe the home coming. She wanted so badly to get along with her mother. These are dreadful situations and choices/decisions needed to be made.

## Additional Modes of Thought

There are numerous additional methods of thought that community college students need to develop. These can be quite complex in what is being stressed.

Making of inferences is an important kind of thinking that can be quite useful now and in the future. Inferential thought may provide factual data to operate on mentally. From the data provided, students need to infer what is meant. There might be several inferences and each needs to be evaluated in class. Students must realize that information provided when reading and discussing is not clear cut, but tends to lead the thinker to infer. Thus, the reader needs to read "between the lines." The instructor can provide much assistance to students to become proficient here. There are shades of gray in what is being read. Not all subject matter can be stated factually. When looking at the Gross National Product, by decades covering the last one hundred years, for example, many dollar amounts are given. However, what is meant by all these dollar values in terms of trends? There certainly can be many interpretations here that need clarification through discussions. Even in the case of a paragraph being read, the topic sentence may not be given but needs to be inferred.

A second valuable additional kind of thinking is to understand metaphors and similes. Generally, analogies need to be drawn when metaphorical language and similes are used. The writer, too frequently, attempts to read content factually. This does not work when creative expressions are used by an author. Sometimes, an instructor needs to spend a considerable amount of time in brain storming what is meant by

expressions involving imagery, that is metaphors and similes. Higher levels of cognition may definitely be emphasized here.There are writers who state that selected ideas can be expressed more clearly when using imagery as compared to factual attempts. It behooves instructors to teach and students to understand imagery!

Third, students need to attempt to separate the author's ideas from their very own interpretations. Too frequently, readers want to attach meaning to the author's purposes or their very own purposes in interpretation, only. Rather, both are important. Students then need to comprehend the author's purpose as well as their own interpretations from the reading selection. The two then may be integrated through analyzing, and synthesizing within a discussion setting. Depth thinking rather than survey approaches should be used. With depth teaching and learning, the student is guided to think through what has been studied and come up with a thorough grasp of the subject matter. Superficial learning occurs through survey procedures whereby much is covered in subject matter content but is not understood with meaning.

Fourth, sophisticated cause and effect thinking is vital. There generally are multiple causes for a happening. Too frequently, individuals wish to ascribe a single cause. This simplifies a matter. Rather, there are numerous reasons why something occurred. Complexity in thought stresses that many reasons are there for an event. New reasons also arise as to causes. Human beings are on a threshold of discovering more and more. Students need to be guided to view happenings in an open ended way as to why something transcribed. Closure is not desired since the new and the novel continue to be stated as causes of an event or happening. Students need to be guided to explore and discover. There are fascinations involved in learning about multiple causes for an event or for related events.

Fifth, students need to perceive knowledge as being related, not as isolated entities. With the perceived relationship of knowledge, students view ideas as leading on to other ideas. The relationship of ideas does not stress a halt between one concept and another nor of one generalizations and another, rather there is a wholeness that overlaps and broadens the scope of learning. Retention is increased when an individual grasps an idea and perceives that there are related ideas. One idea then does not stop as an entity but increases in number to others. The instructor must assist students to grasp and correlate/fuse content within an academic discipline and among diverse areas of knowledge.

Sixth, students need to understand main ides as compared to those which are subordinate. There may be a main idea for a single page of content read and discussed. Or, numerous pages may be read and elaborated upon as a main idea. The point is that a main idea is broad in nature. The main idea as to accuracy may be evaluated through

the support received from subordinate or ideas of lesser importance but do relate to the broader more encompassing subject matter expressed in a single statement. Understanding main ideas stresses what is significant and vital as compared to that which upholds the main idea.

Seventh, students need to reflect upon what has been learned. With reflection, the student reviews subject matter acquired. The content learned then has a better chance of being retained. Also, the learner has opportunities to indicate what has and has not been learned. Reflection emphasizes that content learned has a better chance of survival since rehearsal of subject mater is in evidence. The rehearsal stresses going over what has been learned and noticing gaps in knowledge. These gaps indicate to the learner what is left to learn. Reflection emphasizes metacognition in that the student monitors his/her own achievement in a competent manner. Monitoring of the self in ongoing lessons and units of study indicates that the student is becoming a responsible learner. He/she is taking charge of making certain that learning is occurring and ongoing. If a student perceives gaps in learning knowledge and skills, he/she discovers this involving the self or with others, including the instructor. Students need to take the initiative in asking and seeking more knowledge and increased skills. No one alone can provide this to the student. The student needs to seek that which is salient and important to make learning more holistic.

Eighth, students need to be actively involved in learning, not passive recipients of knowledge and skills.The student is reading to be actively engaged in learning and not merely soak in knowledge and skills through lectures. An engaged learner becomes curious and is willing to grow, develop, and achieve. There is no end to what can be learned since it is ongoing and continuous. Instructors need to assist students to explore, to discover, and to initiate. Opposite is a student who merely depends upon the instructor and other students to take the lead to obtain what is necessary to pass tests and the testing situation. There is much more to learning than to pass tests.

Ninth, what has been learned needs to be used in one way or another in a contextual situation. Many uses then need to be made. With the level of application in teaching, the student is able to retain knowledge and skills acquired through use. Inert ideas have little or no value, but what has application values can be useful and utilitarian. Instructors may assist students to apply in many situations that which has been learned. Peers also need to help here. When students become responsible individuals, they find useful ways of applying knowledge and skills.

Tenth, the student needs to persevere in ongoing responsibilities and tasks. Hardly can anyone be successful in life unless there is much effort put forth to achieve objectives. Giving up is the opposite of persevering. Students individually and in groups need to work toward

goal attainment. A clear vision of ends can assist the student to achieve, grow, and attain. The instructor needs to guide students to perceive goals with clarity and assist in motivating students so that goals are achieved and success in learning is continuous and ongoing. The student of today will be at the work place in a very short period of time. With clarity in goal perception, the student may well make a relevant connection between current course work and how these learnings will assist to become competent individuals at the work place and in the home setting. Multiple Intelligences Theory emphasizes that students use talents and abilities possessed to their fullest! (Gardner, 1993).

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